Yakeen NEET 2.0 2026

Physics by MR Sir | **Basic Maths and Calculus (Mathematical Tools)** | **Assignment-02 By: M.R. Sir**

1. Find the 15th term of the sequence 20, 15, 10, ……

(1) –45 (2) –50

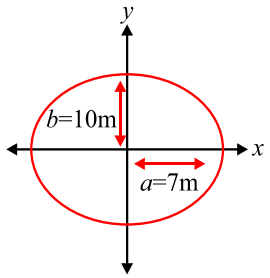
(3) –55 (4) 0

2. If $\frac{a}{3}=\frac{b}{2}$, then value of $\frac{2a+3b}{3a-2b}$ is:

(1) $\frac{12}{5}$ (2) $\frac{5}{12}$

(3) 1 (4) $\frac{12}{7}$

3. Write the equation of this graph.



where a = semi minor axis and b = semi major axis

(1) $\frac{x^2}{10^2}+\frac{y^2}{7^2}=1$ (2) $\frac{x^2}{7}+\frac{y^2}{10}=1$

(3) $\frac{x^2}{7^2}+\frac{y^2}{10^2}=1$ (4) $\frac{x^2}{7^2}+\frac{y^2}{10^2}=4$

4. The line $4x + 7y = 12$ meets x-axis at the point:

(1) (3, 1) (2) (0, 3)

(3) (3, 0) (4) (4, 0)

5. Find the solutions of given equation $2x^2 + 3x – 2 = 0$:

(1) $x=-3,\frac{1}{2}$ (2) $x=3,\frac{1}{2}$

(3) $x=-2,\frac{1}{2}$ (4) $x=2,\frac{1}{2}$

6. Find slope of tangent at x = 1m, if the curve equation $y = x^2 + 2x + 1$ is given

(1) 3 (2) 4

(3) 6 (4) None of these

7. Given $2x^2 + 5x – 12 = 0$, find the root of x

(1) $x=\frac{3}{2},-4$ (2) $x=-\frac{3}{2},-4$

(3) $x=\frac{3}{2},-2$ (4) $x=-\frac{3}{2},4$

8. Given $x^2 + 7x + 12 = 0$, find the root of x

(1) $x=\frac{3}{2},-4$ (2) $x = –3, –4$

(3) $x=\frac{3}{2},4$ (4) $x=\frac{3}{2},-2$

9. Solutions of equation $10x^2 – 27x + 5 = 0$ are:

(1) $\frac{5}{2},\frac{1}{5}$ (2) $\frac{5}{2},\frac{3}{2}$

(3) $\frac{1}{5},\frac{5}{5}$ (4) $\frac{1}{2},\frac{3}{5}$

10. What is the minimum value of $\frac{2}{4+\sin\theta+\sqrt{3}\cos\theta}$?

(1) 0 (2) 1

(3) $\frac{1}{3}$ (4) $\frac{1}{2}$

11. Evaluate $4\tan^2 45° + 4\cos^2 30° – 8\sin^2 60°$.

(1) 1 (2) 0

(3) 2 (4) 4

12. The roots of equation $x^2 – 11x + 28 = 0$ is:

(1) 7 and 4 (2) 7 and 3

(3) 8 and 3 (4) 7 and 11

13. $\sin 20° \sin 70° - \cos 20° \cos 70° =$

(1) 1 (2) 0

(3) 1/2 (4) $\sqrt{3}/2$

14. If $y = 4x^2 + 2x$, then slope of y-x graph at $x = 1$ is:

(1) 10 (2) 8

(3) 6 (4) 12

15. The equation of straight line having slope $\sqrt{3}$ and y intercept of –2 will be:

(1) $y = \sqrt{3}x + 2$ (2) $y = \sqrt{3}x - 2$

(3) $y = -\sqrt{3}x - 2$ (4) $y = -\sqrt{3}x + 2$

16. The equation $\sqrt{x} = 2y$ represents that graph between x and y is a:

(1) straight line (2) parabola

(3) hyperbola (4) circle

17. Find sum of infinite term

$1 - \frac{1}{2} + \frac{1}{4} - \frac{1}{8} + \frac{1}{16} - \frac{1}{32} ..... \infty$

(1) $\frac{1}{2}$ (2) $\frac{2}{3}$

(3) 2 (4) $\frac{3}{2}$

18. Find sum of $1 + \frac{1}{3} + \frac{1}{9} + \frac{1}{27} ...$ up to $\propto$ term

(1) $\frac{3}{2}$ (2) $\frac{2}{3}$

(3) $\frac{4}{3}$ (4) $\frac{3}{4}$

19. If $\cos A = \frac{7}{25}$, then $\tan A + \cot A =$ _____

(1) $\frac{25}{168}$ (2) $\frac{168}{25}$

(3) $\frac{625}{168}$ (4) None of these

20. Value of $\sin(37°) \cos(53°)$ is

(1) $\frac{9}{25}$ (2) $\frac{12}{25}$

(3) $\frac{16}{25}$ (4) $\frac{3}{5}$

21. Find the value of $\sin(105°)$.

(1) $\frac{1}{4}\left(\sqrt{3} + \sqrt{7}\right)$

(2) $\frac{1}{4}\left(\sqrt{5} + \sqrt{2}\right)$

(3) $\frac{1}{4}\left(\sqrt{3} + \sqrt{2}\right)$

(4) $\frac{1}{4}\left(\sqrt{6} + \sqrt{2}\right)$

22. Find angle subtended by a circular arc of radius 6 cm and length π cm at its centre

(1) 60° (2) 15°

(3) 30° (4) 45°

23. Find the value of $\sin^{-1} 1$.

(1) $\frac{\pi}{4}$ (2) $\frac{\pi}{6}$

(3) $\frac{\pi}{2}$ (4) π

24. If $\tan\theta = \frac{5}{12}$; then what is the value of $3\sin\theta + 2\cos\theta$.

(1) 3 (2) 4

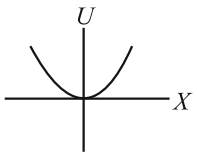
(3) –3 (4) 12

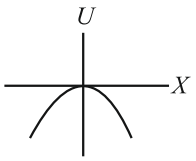
25. If $y = \frac{\tan\theta}{\theta}$, then find the value of y if $\theta = 10°$

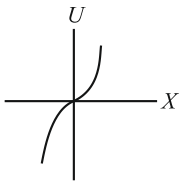
(1) 10° (2) 0

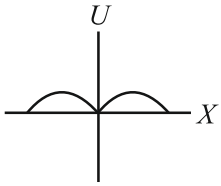
(3) 1 (4) $\sqrt{3}$

26. A body is attached to a spring whose other end is fixed. If the spring is elongated by x, its potential energy is $U = 5x^2$, where x is in metre and U is in joule. U–x graph is

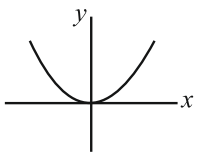
(1) 

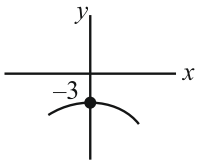
(2) 

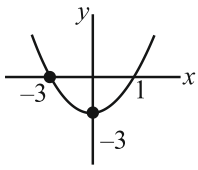
(3) 

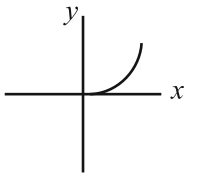
(4) 

27. If $y = x^2 + 2x - 3$, y-x graph is

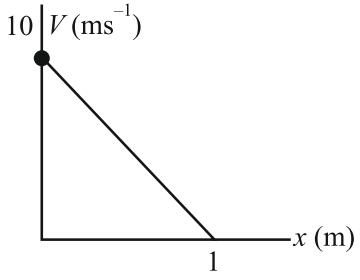
(1) 

(2) 

(3) 

(4) 

28. The velocity displacement graph of a particle moving along a straight line is shown in figure.



The velocity as function of $x(0 \le x \le 1)$ is

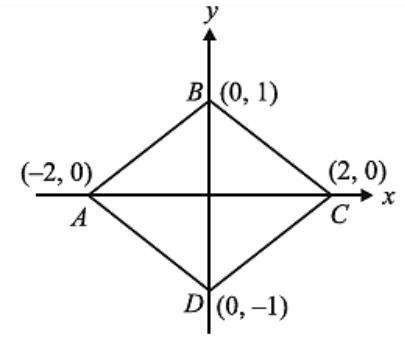
(1) $-10x$

(2) $-10x + 10$

(3) $10x - 10$

(4) $-10x^2 + 10x + 10$

29. A parallelogram $ABCD$ is shown in figure



Column-I	Column-II
i. Equation of side AB	a. $2y + x = 2$
ii. Equation of side BC	b. $2y - x = 2$
iii. Equation of side CD	c. $2y + x = -2$
iv. Equation of side DA	d. $2y - x = -2$

Correct matching is

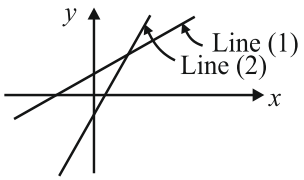
(1) i → b; ii → a; iii → d; iv → c

(2) i → a; ii → b; iii → d; iv → c

(3) i → b; ii → d; iii → c; iv → a

(4) i → c; ii → a; iii → d; iv → b

30. Which of the following statement is not correct for following straight line graph:



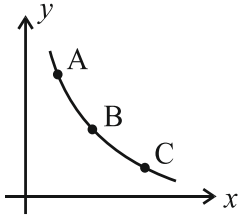
(1) Line (2) has negative y intercept

(2) Line (1) has positive y intercept

(3) Line (2) has positive slope

(4) Line (1) has negative slope

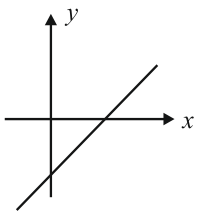
31. The slope of graph in figure at point A, B and C is m_A, m_B and m_C respectively, then:

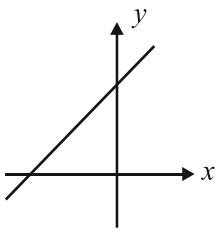


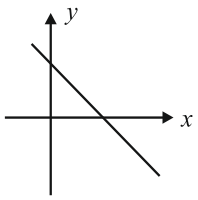
(1) $m_A > m_B > m_C$ (2) $m_A < m_B < m_C$

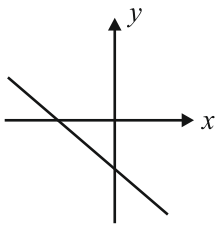
(3) $m_A = m_B = m_C$ (4) $m_A = m_B < m_C$

32. Which graph is the best representation for the given equation, $y = 2x - 1$

(1) 

(2) 

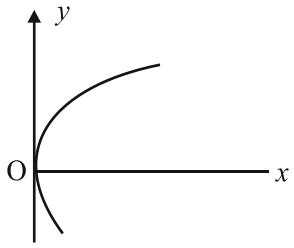
(3) 

(4) 

33. The equation $\sqrt{x} = 2y$, represents that graph between x and y is a:

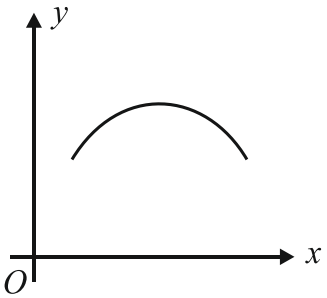
(1) Straight line (2) Parabola
(3) Hyperbola (4) Circle

34. At $x = 0$, value of slope is:



(1) 0 (2) 1
(3) –1 (4) Infinite

35. Magnitude of slope *i.e.*, steepness of graph shown in figure.

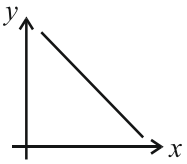


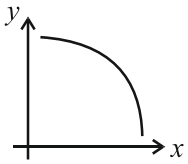
(1) First increase and then decreases
(2) First decreases and then increases
(3) Decreases continuously
(4) Increases continuously

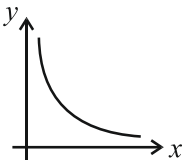
36. Distance between points (2, 3, –7) and (–2, 0, 5) is

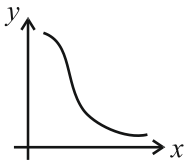
(1) 5 (2) 13
(3) $\sqrt{145}$ (4) $\sqrt{119}$

37. Graph of $x^2y = 2$ is best represented by:

(1) 

(2) 

(3) 

(4) 

38. If two straight line is perpendicular to each other them product of Their slope is

(1) 2 (2) 1
(3) –1 (4) zero

39. Object is moving on the straight line of equation $4y + 3x = 5$ and force acting on it is $F = 3i + 4j$, then work done will be:

(1) 2 (2) 1
(3) –1 (4) zero

ANSWER KEY

1.	(2)	21.	(4)
2.	(1)	22.	(3)
3.	(3)	23.	(3)
4.	(3)	24.	(1)
5.	(3)	25.	(3)
6.	(2)	26.	(1)
7.	(1)	27.	(3)
8.	(2)	28.	(2)
9.	(1)	29.	(1)
10.	(3)	30.	(4)
11.	(1)	31.	(1)
12.	(1)	32.	(1)
13.	(2)	33.	(2)
14.	(1)	34.	(4)
15.	(2)	35.	(2)
16.	(2)	36.	(2)
17.	(2)	37.	(3)
18.	(1)	38.	(3)
19.	(3)	39.	(4)
20.	(1)		

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